

CLAIMS

1. A method of performing instrument tracking on an image comprising:

collecting at least one image;

computing at least one of a position and orientation of at least one instrument for said at least one collected image; and

displaying at least one of said collected image, said at least one position and orientation of said at least one instrument and at least one image of said at least one instrument located at said at least one of a position and orientation.
2. The method of Claim 1 comprising collecting at least a plurality of 2D fluoroscopic images.
3. The method of Claim 2 comprising continuously scrolling through said plurality of said collected images using a display.
4. The method of Claim 3 comprising projecting said at least one position and orientation of said at least one instrument into said plurality of collected images in sequence.
5. The method of Claim 1 comprising calibrating said at least one collected image such that said at least one position and orientation of said at least one image may be accurately displayed.
6. The method of Claim 5 comprising selecting at least one calibrated image to be a current image.
7. The method of Claim 6 comprising computing said at least one position and orientation for said at least one instrument for said current image.

8. The method of Claim 1 comprising collecting said at least one image using at least one moveable collection device.

9. The method of Claim 8 wherein said moveable collection device comprises a C-arm coupled to an imaging device.

10. A method of performing instrument tracking on a series of images using an imaging device, comprising:

collecting a series of 2D images;

calibrating said series of 2D images such that at least one of a position and orientation of at least one instrument may be accurately displayed in at least one image of said series of images;

selecting at least one image of said series of images to be a current image;

computing said at least one position and orientation of said at least one instrument for said current image;

projecting said at least one position and orientation within said current image; and

displaying said current image.

11. The method of Claim 10 comprising collecting said series of 2D images using a collection device that moves.

12. The method of Claim 11, wherein said collection device comprises a C-arm coupled to the imaging device.

13. The method of Claim 13 wherein said series of 2D images comprise a series of 2D fluoroscopic image.

14. The method Claim 10 comprising continually scrolling through said series of images in a display.

15. The method of Claim 14 comprising projecting said at least one position and orientation of said at least one instrument into at least one image of said series of images.

16. The method of Claim 10 comprising incrementing at least said current image.

17. The method of Claim 16 comprising recomputing said at least one position and orientation of said at least one instrument.

18. An apparatus for performing instrument tracking on a series of images, the apparatus comprising:

at least one collection device that moves and is adapted to collect the set of images;

at least one processing device communicating with at least said moveable collection device and adapted to produce a scrolling series of images including at least one of a position and orientation of at least one instrument and at least one image of said at least one instrument located at said at least one of a position and orientation; and

an output communicating with at least said processing device and adapted to display at least one image of said scrolling series of images.

19. The apparatus of Claim 18 wherein said collection device that moves comprises at least one C-arm.

20. The apparatus of Claim 18 wherein said collection device that moves comprises at least transmitter and detector devices.